

Setting standards for scientists

For almost ten years, COMEST has advised UNESCO on the formulation of ethical guidelines

Simone Scholze

From the Hippocratic Oath to the Russell–Einstein Manifesto, from Maimonides' Oath to the Declaration of Geneva (the Physician's Oath), human history reveals an abundance of pledges, guidelines and laws to regulate the relationship between professionals and society. However, increasing concerns about the new and emerging ethical aspects of biomedical research, and its potential for abuse, have led to a surge of ethical debates and their translation into a new, globally accepted codification.

By virtue of its function in setting standards and its advocacy of universal norms and values, the United Nations Educational, Scientific and Cultural Organization (UNESCO; Paris, France) is well placed to address the ethical dimensions of debates about progress in science and technology and the principles on which a 'knowledge society' might be built. UNESCO therefore reinforces its normative mission by promoting ethical principles for scientific and technological progress and by encouraging education in ethics.

The primary reason for developing an ethical code is to reinforce society's trust in scientists by explicitly connecting the basic values of science to the ideals of social responsibility and accountability. However, ethics is not an alibi. Private and public organizations and individuals should not use ethics as a façade to give their activities greater credibility or legitimacy.

As stated by Koichiro Matsuura, Director-General of UNESCO, in Bangkok, Thailand, on 23 March 2005, during the opening ceremony of the Third Session of the World Commission on the Ethics of Scientific Knowledge and Technology (COMEST), new scientific discoveries are a source of wonder and pride. Their

application in and through technological innovations brings many benefits, and in the process transforms how we live and work (UNESCO, 2005a). However, the twenty-first century does not have a naive or simple view of scientific and technological progress. On the contrary, there is mounting concern about the possible adverse consequences of scientific development in general and certain scientific advances in particular. If left unattended, this concern could undermine popular support for, and trust in, the whole enterprise of modern science.

To this end, COMEST was created in 1997 to advise UNESCO in the formulation of ethical principles and guidelines to guarantee that technological progress and the sharing of scientific knowledge are fully consistent with respect to human rights and fundamental freedoms. An advisory body comprising 18 independent experts, COMEST addresses several themes by undertaking studies on the ethics of outer space, the ethics of nanotechnology, the clarification of the precautionary principle, environmental ethics, the teaching of ethics, and the social and ethical responsibilities of scientists. In conformity with its Statutes, the diversity of views is the *raison d'être* of COMEST, which joins its efforts with other relevant international organizations. Any apparent difference between COMEST members with scientific training and those from a humanities or philosophy background represents a healthy reflection of this diversity of views. The appropriate role for UNESCO is to allow this diversity to express itself within COMEST but to reconcile the different perspectives.

The primary reason for developing an ethical code is to reinforce society's trust in scientists...

Both scientific and philosophical approaches to the complexities of scientific and technological advances are taken into account through the participation of experts. They form working groups that help UNESCO to identify the significant issues and potential international needs and activities in different fields such as environmental ethics, nanotechnology ethics, teaching of ethics, as well as science ethics and scientists' responsibility.

The working groups comprise not only COMEST members but also *ad hoc* advisors, and their composition takes into account professional excellence, multidisciplinary, gender and regional distribution, in accordance with the Statutes of COMEST and the internal rules of UNESCO. The groups' conclusions and recommendations are submitted to COMEST, which then prepares a report for the Director-General, along with its recommendations. The Director-General then transmits these results to the UNESCO Member States and to the bodies concerned with the Commission's proposals.

In recent years, the international scientific community has deemed it necessary to improve reflections and debates in the contexts of a culture of peace and human security, paying special attention to ethical principles and responsibilities in the practice of science and the social responsibilities of scientists. Ethical concerns are arising from the link between science and society as a result of the

increasing mobilization of scientists and scientific associations, such as the International Council for Science (ICSU; Paris, France), the Third World Academy of Sciences (Trieste, Italy) and the InterAcademy Council (Amsterdam, The Netherlands).

In accordance with the 1999 World Conference on Science in Budapest, Hungary, a mandate was assigned for COMEST and ICSU to undertake studies on the possibility of creating a code of conduct in ethics for scientists. This mandate was duly endorsed by the 30th Session of UNESCO's General Conference in 1999, and was confirmed by the UN Inter-Agency Consultative Meeting at UNESCO in Paris, in February 2003, and by UNESCO's Executive Board at its 169th Session in 2004.

...there is mounting concern about the possible adverse consequences of scientific development ...

In 2001, ICSU published *Standards for Ethics and Responsibility in Science*, an empirical study that analysed several existing standards for ethics and responsibility in science. This research, which took into account 115 ethical standards for science—39 international and 76 national—shows an exponential increase in the number of standards formulated over the years, from a mere 6 before 1970 to more than 40 during the past five years (ICSU, 2002). As the study makes clear, ethical standards for science must be formulated with great care and integrity. Asking scientists to be socially responsible, for example, requires that the study of ethics be an integral part of their education and training, with the purpose of enhancing current and future scientists' ethical competence.

To explore the wider field of science ethics and relevant topics for future international action, UNESCO and COMEST set up in 2005 an *ad hoc* group of prominent scientists, philosophers and experts to examine this matter. In its 4th Session in Bangkok in March 2005, COMEST endorsed the strategy for preparing a feasibility study, on the basis of a recommendation from a group of experts. A two-tier approach was chosen: developing codes of

conduct is the work of scientific organizations and academies, but UNESCO could develop a framework of ethical principles on which codes of conduct could be grounded. COMEST therefore advised UNESCO to carry out studies on the advisability of drafting an international declaration on science ethics that could serve as a basis for an ethical code of conducts for scientists. This recommendation was transmitted to UNESCO's Executive Board in its 172nd Session in September 2005, and to the General Conference of UNESCO in its 33rd session in October 2005.

Pursuant to Resolutions 35 and 39, issued after intense debates among Member States, the General Conference took note of COMEST's recommendation and asked the Director-General "to pursue reflection on the question of science ethics", in cooperation with ICSU and COMEST, and to submit a report to the Executive Board at its 175th Session in September 2006 (UNESCO, 2005b). This action was the outcome of a lengthy debate, which showed that, after the three UNESCO declarations in bioethics—on the human genome and human rights, on human genetic data and on bioethics and human rights—not all Member States are convinced of the necessity to develop a new normative instrument in the area of science ethics, and that even starting a feasibility study would be premature.

After the debate and resolution of the General Conference, it is not possible at this time to develop a normative instrument. This is owing to a lack of consensus among the Member States on when to start such an international normative process, and also to UNESCO's decision to concentrate on implementing existing normative instruments and on ratifying those adopted to ensure their widest possible application. Thus, in accordance with the approved medium-term strategy for 2006–2007, the main objectives will be: to survey the wider field of science ethics and relevant topics for international action; to carry out consultations with scientists, philosophers and policy-makers in all regions; and to undertake consultations with relevant organizations and stakeholders in the Member States.

Therefore, a process of regional and international consultations with scientists, ethicists and policy-makers will take

Asking scientists to be socially responsible...requires that the study of ethics be an integral part of their education and training...

place throughout 2006 and 2007, with the aim of providing information for the report requested by the 33rd General Conference. This is an opportunity to gather facts and exchange information on all the issues surrounding codes of conduct for scientists as they pertain to UNESCO's mandate. To generate information from the consultation meetings, a guiding document with questions and items about the 1974 Recommendation on the Status of Scientific Researchers will be widely discussed (UNESCO, 1974). These questions will help to verify whether the provisions in the 1974 recommendation adequately cover the condition of science and scientific researchers today, or, if not, which general issues should be reconsidered. The questions will also help to determine which ethical principles should be taken into account, and if there are any aspects that are missing or not addressed. The 2006 meetings are scheduled to take place in Tokyo, Japan; New Delhi, India; Bangkok, Thailand; Geneva, Switzerland; and Belo Horizonte, Brazil. Two further meetings will take place in African and Arab countries in 2007.

In the light of UNESCO's recent 60th anniversary, it is worth recalling some facts that were relevant in creating the organization. In November 1945, during the inaugural conference for the establishment of UNESCO, Ellen Wilkinson, the British Minister of Education and the Chair of the conference, stated that although 'science' did not appear in the original title of the organization, the British delegation would put forward a proposal to include it, so the name would read 'Educational, Scientific and Cultural Organization'. "In these days," she said, "when we are all wondering, perhaps apprehensively, what the scientists will do to us next, it is important that they should be linked closely with the humanities and should feel that they have a responsibility to mankind. I do not believe that any scientists will have survived the world catastrophe, who will say that they are utterly uninterested in the social implications of their discoveries" (Atlee *et al*, 1985).

In fact, Wilkinson's speech in 1945 allowed the insertion into UNESCO of not only science, but also the ethics of science. The creation of COMEST almost a decade ago represented a new era of ethical reflection among Member States and the scientific community worldwide. They are indicators that UNESCO was and will be a central—even unique—instrument to promote guidance and to offer a forum for ethical and moral reflection on scientists' activities. History has shown us that science can be misused, but UNESCO's efforts are an important step towards addressing these risks.

REFERENCES

- Atlee C, Wilkinson E, Bodet JT, Cassin R (1985) The life of the mind. *UNESCO Courier* Oct: 8–9
- ICSU (2002) *Standards for Ethics and Responsibility in Science—an Empirical Study*. Paris, France: International Council for Science
- UNESCO (1974) *Recommendation on the Status of Scientific Researchers*. Paris, France: UNESCO
- UNESCO (2005a) *Proceedings of the Fourth Session of COMEST, 23–25 March 2005, Bangkok, Thailand*. Paris, France: UNESCO
- UNESCO (2005b) *Records of the General Conference of UNESCO, 33rd Session*. Paris, France: UNESCO



Simone Scholze is in the Division of Ethics of Science and Technology at UNESCO, Paris, France.

E-mail: s.scholze@unesco.org
doi:10.1038/sj.embor.7400709